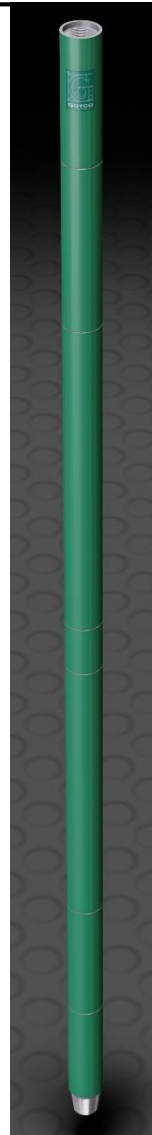
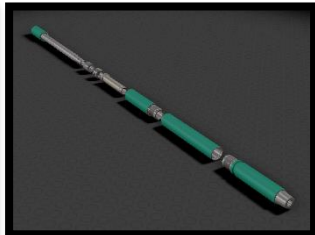
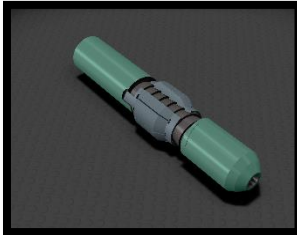
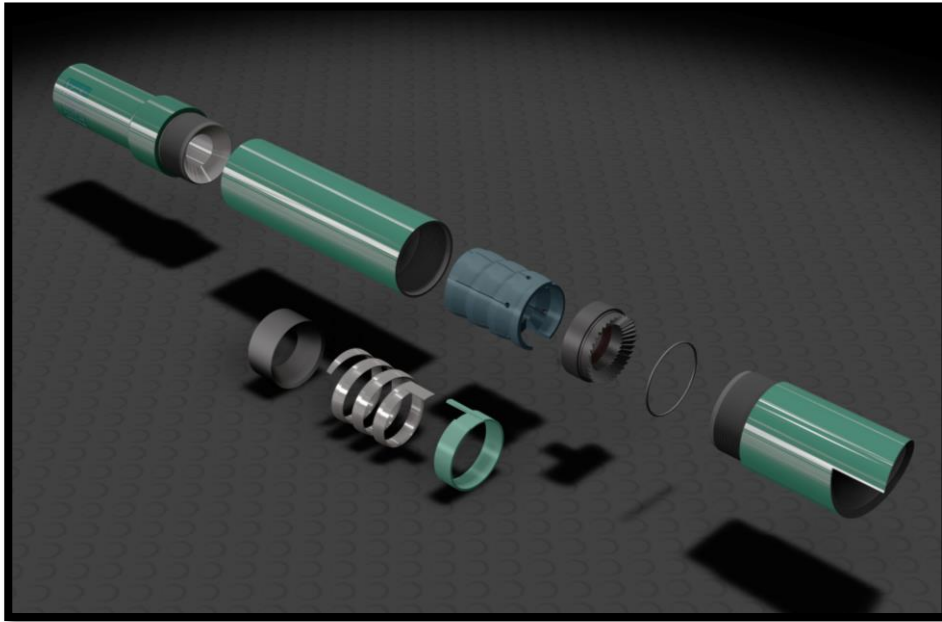




# GOTCO INTERNATIONAL

## SUPREME FISHING AMPLIFIER

### Operation and Service Manual



1<sup>st</sup> Printing, December 19th, 2014

The design and tool specifications in this Operation & Service Manual were in effect at the time this manual was revised and approved for printing. All information regarding tool use, design, and strength capabilities are based on ideal conditions and are not meant to imply a guarantee, but only to be used as a reference guide. Gotco International reserves the right to change the designs, specifications, or discontinue products without notice.



# Gotco International

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### **LEGAL NOTICE:**

*All references to "Logan Oil Tool" part numbers in this manual are for the sole purpose of identifying interchangeable parts. Referencing these parts and tools does not imply that Gotco International is in any way affiliated with Logan Oil Tools. Gotco International does not represent any Logan Oil Tool Products.*

1<sup>st</sup> Printing, December 19<sup>th</sup>, 2014



# Gotco International

## **General Description:**

The Gotco Supreme Amplifier is used in conjunction with a Gotco Supreme Fishing Jar and it acts as a “fluid spring” when a strain is applied to the jarring tools in the “fishing” string. This also isolates the kinetic energy to the area where the energy is needed, at the point of where the fish is stuck down-hole. One of the primary functions of the Supreme Amplifier is to intensify the jarring impact that is delivered to the stuck fish. When used with the proper drill collars and the Supreme Fishing Jar, it will deliver the necessary impact to release the stuck fish in most situations.

Once the Supreme Fishing Jar reaches its Free Stroke position, and the strain is removed from the fishing string, the stored energy of the Amplifier is then released, accelerating the mass upward, unleashing a high impact blow to the stuck fish. The Amplifier helps to isolate and cushion the jarring blow and energy, to help keep the string from rebounding, damaging the fishing string or other tools within the string.

Working Load is controlled by applying lighter or heavier pull on the work string. Light pull will create a light impact, and a heavy, faster pull will create a heavy impact.

The Gotco Supreme Amplifier should be used with the correct Gotco Supreme Jar, having the correct outside diameter and inside diameters.

(See Parts List and Specifications within this Manual for information.)

## **Operation:**

The Supreme Amplifier should be placed in the string when maximum jarring is required. This includes when working in shallow, directional or deviated holes. These types of conditions and environments tend to limit the available “stretch” that can be taken in the string, which limits the effectiveness of the Supreme Fishing Jar. The Gotco Supreme Amplifier helps to deliver a substantial blow to the stuck fish by storing the energy above the drill collars and fishing jar, to make up for the loss of available stretch in the string.

The Gotco Supreme Amplifier is a relatively easy tool to use and requires only a straight and steady pull, with the load determined by the type of job in which it is being used.

All the internal and external mechanically connected parts are tightened to a recommended tightening value. See the Charts in the “Strength and Data Section” of this Manual.

**Caution:** *Tong on to the Supreme Amplifier about 4 inches from the threads on all parts. This will prevent damage to the threaded regions.*

**Caution:** *The Gotco Supreme Amplifier should be located above all the drill collars, heavy weight drill pipe, or any other concentrated mass, that is immediately above the Supreme Jar. This weight will be used to provide the necessary impact at the stuck point when jarring. The working string, above the Amplifier, should not have a weight per foot change for at least 1,000 feet of string directly above the Superior Amplifier. The only*

*exception is for a lighter joint screwed directly into the Amplifier for flexibility, when required for “bending.” The jarring results will be much better, if there is no significant weight above the Amplifier. Excess mass or weight above the Amplifier can cause the impact to occur, resulting in damage to the Amplifier, Jar, Bottom Hole Assembly components, or the fish being retrieved. When working in oversized or deviated holes, the Supreme Jar and Amplifier should be isolated from these areas, by using a more flexible joint of string. This will help to reduce damage to the equipment and protect the tools from fatigue failure and bending loads.*

*It is recommended that not less than two (2) joints of drill collars and not less than four (4) joints of heavy-wt. drill pipe be run between the Supreme Fishing Jar and the Supreme Amplifier, or between the Jar and the working string. If this can’t be avoided, then avoid high-impact jarring loads.*

+



# Gotco International

## **Preliminary Information:**

Caution: The Gotco Supreme Amplifier is shipped in the closed or “cocked” position. It is installed between the running string and the “jarring mass,” which should be located directly above the Gotco Supreme Fishing Jar. Once the Amplifier is elevated in suspension, the mandrel will open two or three inches, prior to the Supreme Fishing Jar is elevated.

Once the Amplifier is lowered down-hole, the temperature will expand the silicon or “energizing fluid,” and close this gap, increasing the working stroke of the tool.

## **Rig Up:**

Fill the Gotco Supreme Amplifier with the supplied, Gotco Amplifier Fluid and test the tool as per testing guidelines in this manual, using a suitable test frame and tester.

Examine the Amplifier to check for any damage parts or leakage, and to make sure that it is properly filled.

*It is recommended that not less than two (2) joints of drill collars and not less than four (4) joints of heavy-wt. drill pipe be run between the Supreme Fishing Jar and the Supreme Amplifier, or between the Jar and the working string. If this can't be avoided, then avoid high-impact jarring loads.*

## **Jarring Procedures:**

The Gotco Supreme Amplifier impact is controlled by the amount of stretch in the running string and the weight of the drill collars installed above the Supreme Fishing Jar. This is controlled by the operator on the rig floor. It is necessary to install the same, similar weights (mass) above the Amplifier, as you do the Fishing Jar, for a minimum of 1,000 feet to lessen the reverse inertia or kinetic energy on the Fishing Jar and Amplifier Assemblies. Apply the

minimum pull load above the weight of the drill collars and running string, to effect a sufficient blow.

**Caution:** *Do not exceed the published, Maximum Pull Load at any time during the jarring operations! See the “Strength and Data” section of this manual.*

## **Jarring Procedure:**

1. Initial blow: set the string down to ensure the jar is fully closed. Raise the string, applying the desired over-pull on the Jar.
2. Set the break and wait for the Jar to strike a blow. This could take a few seconds to several minutes, depending on certain hole conditions.
3. Close the Jar and repeat the process, increasing the load as required to free the stuck fish.
- 4.

The Gotco Supreme Amplifier can transmit full torque in left and right hand rotation, at all times, while maintaining full circulation through the assembly.

## **After Jarring, Rig Maintenance:**

Normally, no action is necessary for Rig-down. In most cases, only minor maintenance is required on the rig floor. After inspecting the rig floor for any leaks (Jar or Amplifier), lay the Amplifier down on the derrick floor.

**Caution:** *The Amplifier should not be left hanging from the elevators for extended periods of time.*

**Reminder:** *The Gotco Supreme Amplifier should be located above all the drill collars, heavy weight drill pipe, or any other concentrated mass, that is immediately above the Supreme Jar. This weight will be used to provide the necessary impact at the sticking point when jarring. The working string, above the Amplifier, should not have a weight per foot*

*change for at least 1,000 feet of string directly above the Superior Amplifier. The only exception is for a lighter joint screwed directly into the Amplifier for flexibility, when required for “bending.” The jarring results will be much better, if there is no significant weight above the Amplifier. Excess mass or weight above the Amplifier can cause the impact to occur, resulting in damage to the Amplifier, Jar, Bottom Hole Assembly components, or the fish being retrieved. When working in oversized or deviated holes, the Supreme Jar and Amplifier should be isolated from these areas, by using a more flexible joint of string. This will help to reduce damage to the equipment and protect the tools from fatigue failure and bending loads.*

*It is recommended that not less than two (2) joints of drill collars and not less than four (4) joints of heavy-wt. drill pipe be run between the Supreme Fishing Jar and the Supreme Amplifier, or between the Jar and the working string. If this can't be avoided, then avoid high-impact jarring loads.*

Immediately remove the Gotco Supreme Amplifier from the fishing string and flush all mud from the internal bore, paying close attention to mud or debris inside the Washpipe.

## **After Jarring Procedures:** **(Dressing & Maintenance):**

The Gotco Supreme Amplifier should be disassembled, cleaned, inspected and re-outfitted, after prolonged field use.

## **Equipment Required:**

1. A suitable vise and tong.
2. Over-head crane with a 1 ton (2,000 pound) minimum lifting capacity.
3. Pipe wrenches of various sizes for outside diameters and internal parts.



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4. Chain wrenches of suitable sizes.
5. Nylon lift straps for lifting heavy parts.
6. Suitable belt pulley assembly, suspended from a hoist, for rotating threaded parts during make-up or break-out procedures.
7. Gotco Amplifier Service Kit.
8. A suitable Jar Tester to handle a particular Jar or Amplifier length.
9. Required spare parts, and packing sets.
10. Required "assembly sleeves" for the tool being dressed.

**Caution:** *The Supreme Jar could contain residual pressure, so care should be taken when draining oil from the tool, to avoid bodily harm.*

## **Disassembly Procedures:**

1. Position the Gotco Supreme Amplifier in a floor vise with the Connector Body centered in the vise. Support the Mandrel end of the Jar with a support stand.
2. Loosen the Pressure Body and back off the connection. Place a pan beneath, to catch silicon oil in the pressure chamber. Exercise CAUTION at this point, due to possible residual pressure that could be trapped inside. Allow the silicon oil to drain from the Pressure Body. Do not reuse this oil.
3. Remove the Pressure Body and Washpipe Body as an assembly and set it aside for disassembly later. Support all parts with the belt pulley, as they are being removed.
4. Unscrew and remove the Washpipe and set it aside.
5. Remove the Piston Assembly, and set it aside. Protect these parts by wrapping them with cloth, bubble-wrap or some other method.
6. Reposition the Amplifier in the vise and clamp it in the vise on the Spline Body. Support the Amplifier at the Balance Body location, with a support stand.
7. Remove the Connector Body and set it aside.
8. Remove the Assembly Sleeve installation rings and set aside for later use. Remove the Mandrel Extension and set it aside on a pallet.
9. Remove the Impact Sleeve, if equipped with one, and set it aside.
10. Remove the Mandrel from the Spline Body and set on a pallet.
11. Remove the Spline Body from the Vise.
12. Position the Pressure Body and Washpipe Body in the vise, clamping on the Washpipe Body.
13. Remove the Pressure Body and catch any oil that may have spilled over into the Washpipe Body during disassembly. Set it on a pallet.

**Disassembly has been completed.**

## **Inspection of Parts:**

Steam clean or high pressure wash parts prior to inspection. Inspect all seals and wipers and look for unusual or suspect wear patterns. Worn seals can cause premature seal failure and improper performance during jarring operations.

*Note: All seals should be replaced when doing a complete disassembly or being repaired.*

**Caution:** *It is highly recommended that Magnetic Particle Testing is performed, in order to locate fatigue cracks that can lead to tool failure during use. Inspect all other parts for signs of wear, especially on the spline areas, critical I.D. bores, bearing faces on the connections, sealing surfaces and impact surfaces. Check all the shoulders on the connection joints. Also, check for wear that was caused by excessive torque on tools that have been used in heavy torsional operations, such as milling jobs.*

*\*\*See the following pages for Inspection of Critical Parts.*





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## Inspection of Critical Parts:

### **Piston Assembly:**

Inspect the Piston (Adapters, Packing Sets, Pressure Ring, Copper Rings) cracking or imperfections.

### **Pressure Body:**

Examine the finished, I.D. bore for galling and pitting. If there appears to be any significant damage, the parts will need to be replaced or possibly reworked with chrome plating and grinding. This will need to be done by the manufacturing facility of Gotco International.

### **Spline Body:**

All of the splines inside the Spline Body need to be checked for damage such as heavy wear, burrs or rounded edges. Remove burrs with a file or grinder. Also check the "Impact Sleeve" large end face, if equipped.

### **Mandrel:**

All of the splines on the Mandrel need to be checked for damage such as heavy wear, burrs or rounded edges. Remove burrs with a file or grinder.

**Caution:** *Wear protective eyewear and gloves when using power tools for removing burrs from the spline areas.*

### **Impact Surfaces:**

Impact loads occur mainly on the male end of the Spline Body and the Impact Sleeve, on the large O.D. end. (If equipped with an Impact Sleeve.) These areas need to be inspected for imperfections caused by high impact loads. Any upset can be removed with a file or hand, die grinder, using the proper bit. Also check for visual signs of cracking or any other damage.

## Assembly Procedures:

### **Preparation:**

(SEE SETTING TOOL INSTRUCTIONS, AT THE END OF THIS SECTION))

Clean and inspect all parts, prior to assembly.

Install all the seals and wipers in their proper location, paying close attention to orientation of these parts. All of the seals should be coated with silicon oil, prior to assembly. (See the Illustrations in this Manual)

1. Place the Spline Body in the vise and clamp it down securely. Apply anti-galling grease to the inside of the splines and at the top end of the Spline Body, past the seal gland areas.
2. Install the Mandrel through the Spline Body. Ensure the splines on the Mandrel or properly aligned with the splines on the Spline Body. Grease the splines on the Mandrel first.
3. Install the Mandrel Extension onto the end of the Mandrel and torque it to the specified value, as shown in the **Strength Data Charts** in this manual.

*Note: Some Jars require a Jar Impact Sleeve. If your assembly does, then install it before the Mandrel Extension is screwed onto the Mandrel. Install the sleeve with the larger O.D. going on first.*

Make sure the threads are coated with a suitable, high-quality thread compound. Keep the thread compound between the O-ring seals on the connection, to avoid contaminating the hydraulic oil.

4. Install the Balance Body onto the Spline Body. The balance holes should be pointed away from the Spline Body. Coat the threads with thread compound.

Use the Mandrel Assembly Sleeve or split rings on/ or in the Mandrel Extension grooves, or shoulder area. (See Page 9) Install the split rings or Mandrel Assembly Sleeve with the largest O.D. end toward the Balance Body.

5. Install the Connector Body over the Mandrel Extension, with the I.D. Wiper end, pointed upward, toward the Balance Body. Lubricate the length of the Mandrel Extension with silicon oil, for easier assembly. Screw the threaded end into the Balance Body and tighten. **\*\* Remove the "Installation Sleeve or split rings" from the grooves on the Mandrel Extension.**
6. Install the Packing Assembly on the Mandrel Extension.
7. Screw on the Washpipe to the Mandrel Extension. Apply thread compound to the threads of the Mandrel Extension. Torque to the values given in the **"Strength and Data Chart"** in this Manual.
8. Install the Pressure Body.  
**Note:** *The Pressure Body is stenciled or marked with "Connector Body End" and "Washpipe Body End," as to avoid confusion. Please assemble in the proper direction. Use a high quality thread compound on the Connector Body threads, prior to assembly.*
9. Install the Washpipe Body. Coat threads with thread compound.
15. Tighten all the external part joints to the recommended tightening torque specified. **See the Strength and Data Tables, Chart "C," in this manual.**

(Continues on the next page)



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## **Filling & Testing the Supreme Amplifier:**

***Note: The Gotco Supreme Amplifier should be only filled with Amplifier Fluid (special silicon.)***

1. Stroke the Mandrel, so the gap is in the filled position, see Test Load Chart on the following page.
2. With the tool horizontal, rotate the tool so that the fill plug ports in the Connector Body are pointing straight up and down.
3. Tilt the Amplifier 15-20 degrees from horizontal, Mandrel end highest.
4. Fill the fluid chamber with Gotco Silicon Oil, using the ports on the Connector Body, until all the air is removed. Pump the fluid in the fill plug port on the underside of the tool, allowing air and oil to escape from the fill plug port on the top-side of the tool, returning to the pump reservoir. When all the air has been removed, install the fill plugs in both ports.

## **Testing the Supreme Amplifier:**

1. Set the “jar tester” to the “Test Pull Load” chart in this manual. Perform this test inside the “jar tester.”

***Note: If the pull load needs to be adjusted, make the adjustment and then remove the tension from the amplifier, then re-pull the tool again, to insure an accurate pull-load pressure reading on the test unit.***

2. With the test load applied, measure the Pull Stroke Length. (Reference the Chart in this section.)
3. If the Pull stroke is not correct, then apply a strain (pull), hold for a short time, then relax the strain. Repeat this several times to properly set the packing, prior to adjusting the fluid level.
4. If the Pull Stroke Length is short, then the tool has too much fluid and some will need to be removed.

**Caution:** *Use caution when removing the fill plug, because residual pressure can still be inside the tool. Before removing the fill plug, use the Jar Tester to push the tool closed all the way.*

- \*\*Only the top fill plug needs to be removed to drain some of the fluid. Only a very small amount of fluid should be removed at a time. Then, retest to tool to see the results, and repeat this process until the proper Test Pull Load is achieved, as shown in the Charts.**

5. If the Pull Stroke Length is long, then the tool has too little fluid and some will need to be added.

**\*\*Only the top fill plug needs to be removed to add some of the fluid. Only a very small amount of fluid should be added at a time. Then, retest to tool to see the results, and repeat this process until the proper Test Pull Load is achieved, as shown in the Charts.**

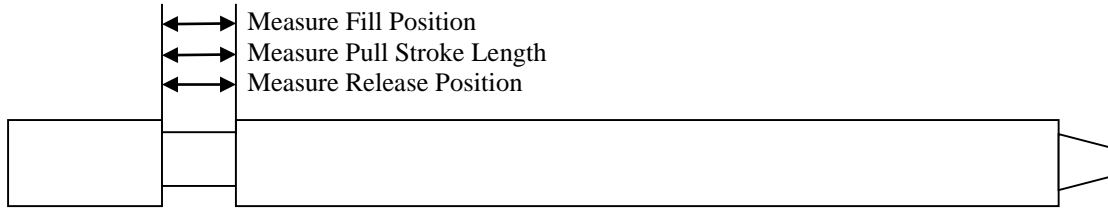
6. The Gotco Supreme Amplifier is properly filled when the Test Pull Load is reached, and has reached the Pull Stroke Length, (+-) 1/8”.

7. Relieve the strain on the jar tester, allowing the amplifier to retract as far as it will go, without the aid of the jar tester pushing it. Measure the “Release Position,” and compare it to the data in the provided Chart in this section. The gap should be within about 1/4 inch of the given values.

SEE “TEST LOAD CHART”  
On the following page.



## TEST LOAD CHART



GOTCO NO.	REF. NO.	Tool Size (OD x ID)	Connection	Fill Position	Test Pull Load	Test Pull Stroke	Release Position	Total Stroke	Torque (ft.-lbs.)
SA-306	614-306	3-1/16" x 1-1/2"	2-3/8 EUE	2-1/2"	30,500	5-7/8"	3-11/16"	6"	2,400
SA-31	614-312	3-1/8" x 1"	2-3/8 REG	2"	43,692	5-7/8"	4"	6"	2,700
SA-313	614-313	3-1/8" x 1-1/2"	2-7/8 PAC	2-1/2"	28,450	5-3/4"	3-1/2"	6"	2,600
SA-377	614-377	3-3/4" x 1-1/4"	2-7/8 REG	2-1/2"	56,900	6-3/8"	3-7/8"	6-5/8"	3,500
SA-36	614-375	3-3/4" x 1-1/2"	2-3/8 IF	2-1/2"	56,900	6-3/8"	3-3/8"	6-5/8"	3,500
SA-42	614-425	4-1/4" x 2"	2-7/8 IF	2-1/4"	40,600	5-11/16"	4"	6-3/16"	5,000
SA-46	614-475	4-3/4" x 2-1/4"	3-1/2 IF	3-1/4"	81,300	6-5/8"	4-1/8"	7"	9,000
SA-62	614-625	6-1/4" x 2-1/4"	4-1/2 IF	3-1/2"	121,900	7-11/16"	4-9/16"	8-3/16"	20,000
SA-76	614-775	7-3/4" x 3-1/16"	6-5/8 REG	3-5/8"	126,000	7"	4-1/2"	8-1/2"	39,000



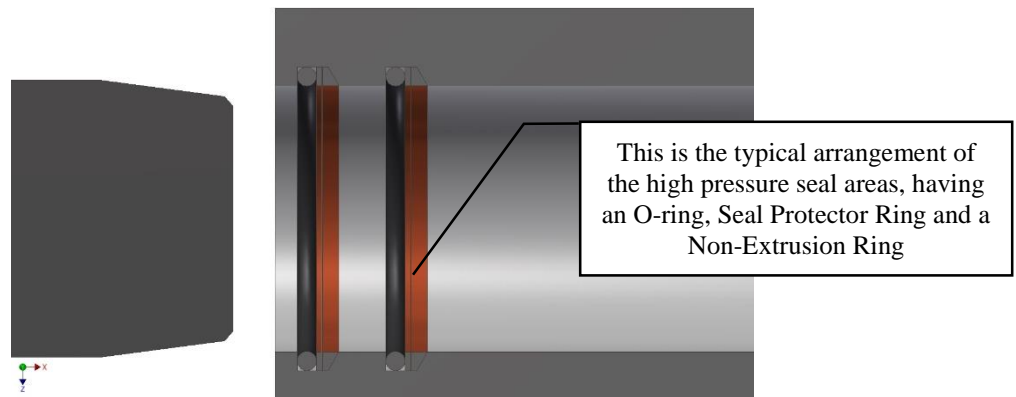
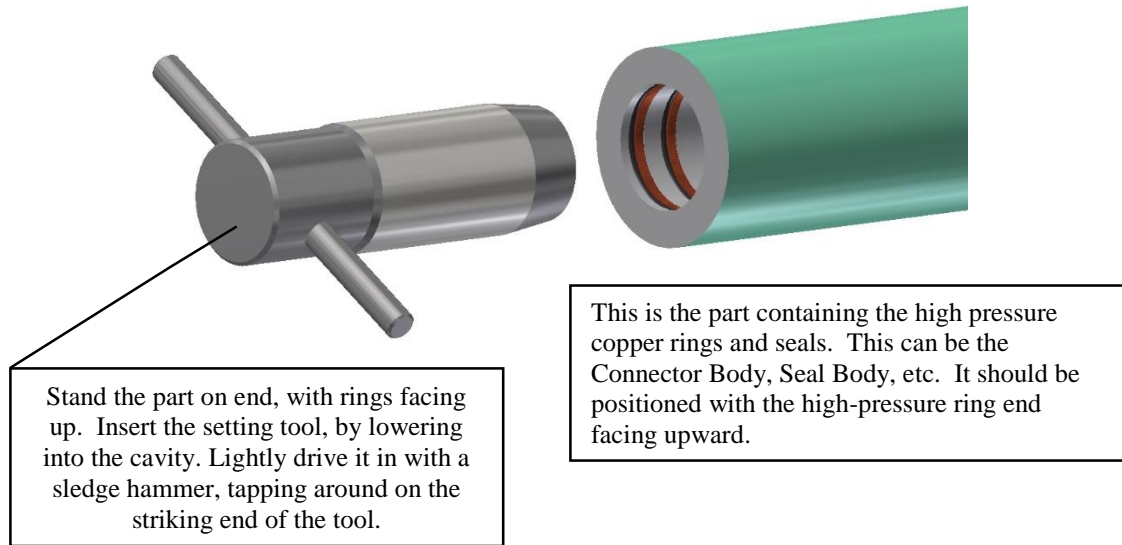


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## GOTCO SUPREME AMPLIFIER

### SETTING TOOL INSTRUCTIONS:

It is recommended that you use the proper “Setting Tool,” when installing the Copper Non-Extrusion Rings, Protector Rings and O-ring Seals in the high-pressure sealing areas. This is normally in the Connector Body and Seal Body parts. The illustration below represents either of these locations and the technique is the same for any area on the Supreme Fishing Jar or the Supreme Amplifier assemblies.



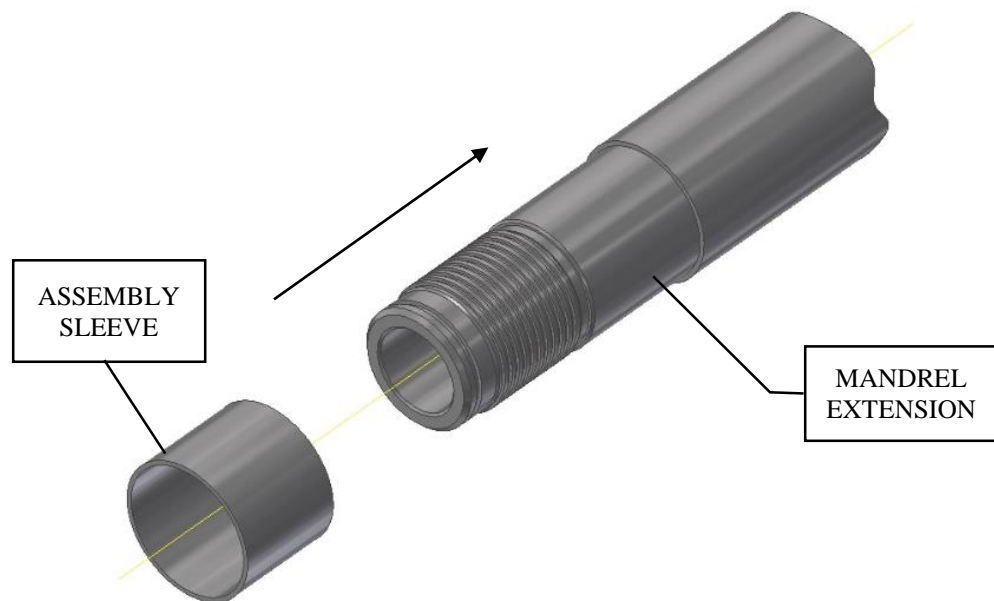


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## GOTCO SUPREME FISHING JARS

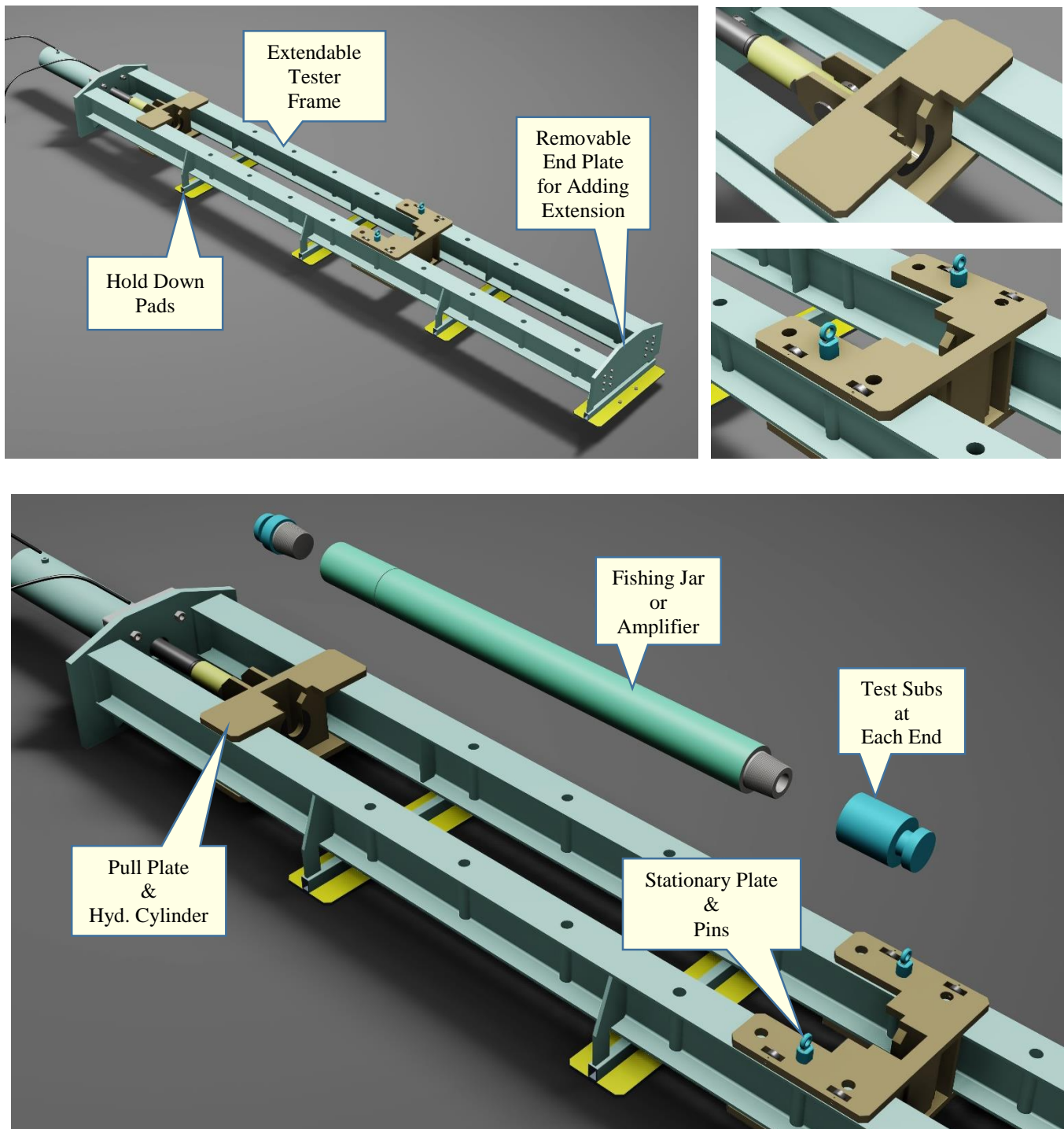
### USING THE ASSEMBLY SLEEVE TOOL:

Use the Mandrel Assembly Sleeve or split rings on/ or in the Mandrel Extension grooves, or shoulder area. Install the split rings or Mandrel Assembly Sleeve with the largest O.D. end toward the Balance Body. Remove the assembly sleeve, once the Connector Body has been slid over the Mandrel Extension and screwed on to the Balance Body.





# Gotco Extendable Jar Tester



For more information about the Gotco Extendable Jar Tester, go to "gotco-usa.com"



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## Gotco Supreme Amplifier Strength and Testing Data

CHART "A" - SPECIFICATIONS

COMPETE ASSEMBLY	SA-306	SA-31	SA-313	SA-36	SA-377	SA-376
<i>O.D (ins)</i>	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
<i>I.D (ins)</i>	1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8
<i>Connection</i>	2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 API IF	2-7/8 API REG	2-3/8 API EUE
<i>Length (ft. &amp; ins)</i>	12' - 4"	8' - 6"	12' - 4"	11' - 10-1/2"	11' - 10-1/2"	11' - 10-1/2"
<i>Stroke (ins)</i>	6	6	6	10	xx	xx
<i>Drill Collar Weight Range (lbs.)</i>	300 - 4,000	300 - 4,000	300 - 4,000	400 - 6,000	400 - 6,000	400 - 6,000
<i>Pump Open Area (sq. ins)</i>	3	3	3	4	4	4

CHART "B" - STRENGTH AND TEST DATA

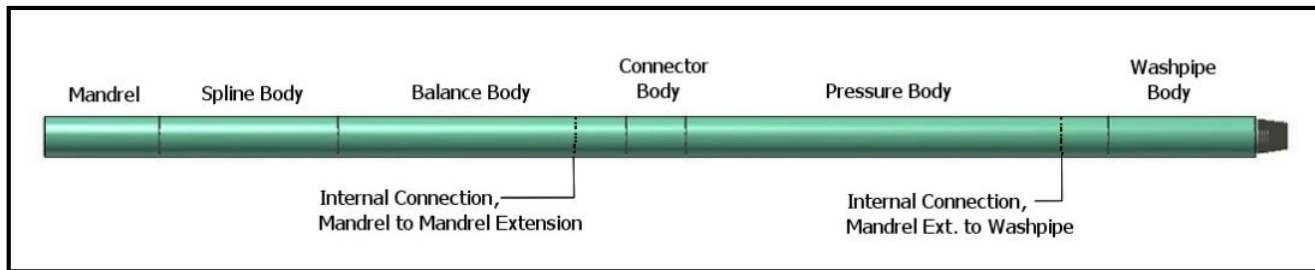
COMPETE ASSEMBLY	SA-306	SA-31	SA-313	SA-36	SA-377	SA-376
<i>Lift Load after Jarring Jar Fully Extended Tensile @ Yield (lbs.)</i>	185,000	253,000	185,000	330,000	330,000	285,000
<i>Torque @ Yield (ft.-lbs.)</i>	4,200	7,500	4,200	14,500	14,500	9,650

CHART "C" - RECOMMENDED TIGHTENING TORQUES (ft.-lbs.)

COMPETE ASSEMBLY	SA-306	SA-31	SA-313	SA-36	SA-377	SA-376
<i>Spline Body to Balance Body</i>	2,100	2,700	2,100	3,500	3,650	3,500
<i>Mandrel to Mandrel Extension</i>	500	600	500	700	700	700
<i>Balance Body to Connector Body</i>	2,100	2,700	2,100	3,500	3,650	3,500
<i>Connector Body to Pressure Body</i>	2,100	2,700	2,100	3,500	3,650	3,500
<i>Mandrel Extension to Washpipe</i>	500	600	500	700	700	700
<i>Pressure Body to Washpipe Body</i>	2,100	2,700	2,100	3,500	3,650	3,500

(xx = contact GOTCO Engineering for details)

These values represent the maximum allowable makeup torque values for these connections. Torque values this high are not always required for each every fishing job and lower values should be considered to save wear on the threads. A good thread compound should be used on these connections.





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## Gotco Supreme Amplifier Strength and Testing Data

CHART "A" - SPECIFICATIONS

COMPETE ASSEMBLY	SA-42	SA-44	SA-46	SA-62	SA-76
<i>O.D (ins)</i>	4-1/4	4-1/2	4-3/4	6-1/4	7-3/4
<i>I.D (ins)</i>	2	2-3/8	2-1/4	2-1/4	3-1/16
<i>Connection</i>	2-7/8 API IF	2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	6-5/8 API REG
<i>Length (ft. &amp; ins)</i>	11' - 4"	xx	11' - 6"	13' - 8"	15' - 7"
<i>Stroke (ins)</i>	6-3/8	xx	7	8-3/16	8-1/2
<i>Drill Collar Weight Range (lbs.)</i>	400 - 6,000	400 - 6,000	500 - 8,000	8,500 - 15,000	12,200 - 21,000
<i>Pump Open Area (sq. ins)</i>	6	7-1/2	7	11	16

CHART "B" - STRENGTH AND TEST DATA

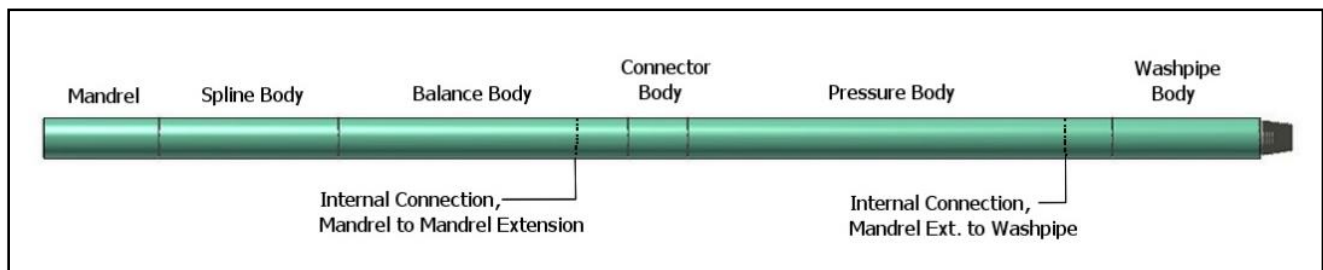
COMPETE ASSEMBLY	SA-42	SA-44	SA-46	SA-62	SA-76
<i>Lift Load after Jarring Jar Fully Extended Tensile @ Yield (lbs.)</i>	375,000	360,000	505,000	1,000,000	1,600,000
<i>Torque @ Yield (ft.-lbs.)</i>	18,500	12,000	18,100	40,800	79,000

CHART "C" - RECOMMENDED TIGHTENING TORQUES (ft.-lbs.)

COMPETE ASSEMBLY	SA-42	SA-44	SA-46	SA-62	SA-76
<i>Spline Body to Balance Body</i>	5,000	3,500	9,090	20,000	39,000
<i>Mandrel to Mandrel Extension</i>	1,500	700	1,800	7,000	12,500
<i>Balance Body to Connector Body</i>	5,000	3,500	9,090	20,000	39,000
<i>Connector Body to Pressure Body</i>	5,000	3,500	9,090	20,000	39,000
<i>Mandrel Extension to Washpipe</i>	1,500	700	1,000	4,800	10,500
<i>Pressure Body to Washpipe Body</i>	5,000	3,500	9,090	20,000	39,000

(xx = contact GOTCO Engineering for details)

These values represent the maximum allowable makeup torque values for these connections. Torque values this high are not always required for each every fishing job and lower values should be considered to save wear on the threads. A good thread compound should be used on these connections.



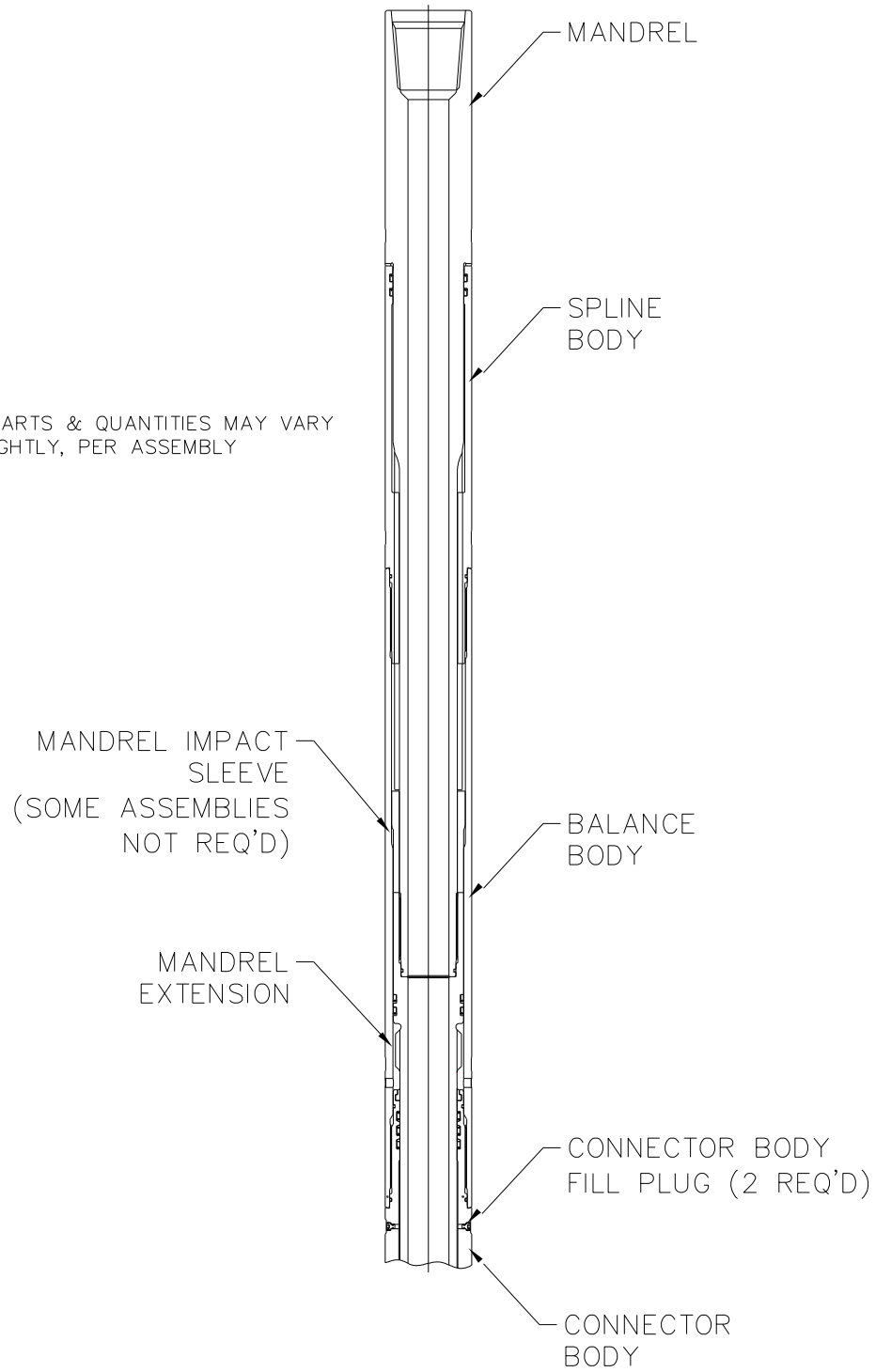




# Gotco International

## METAL PARTS (UPPER HALF)

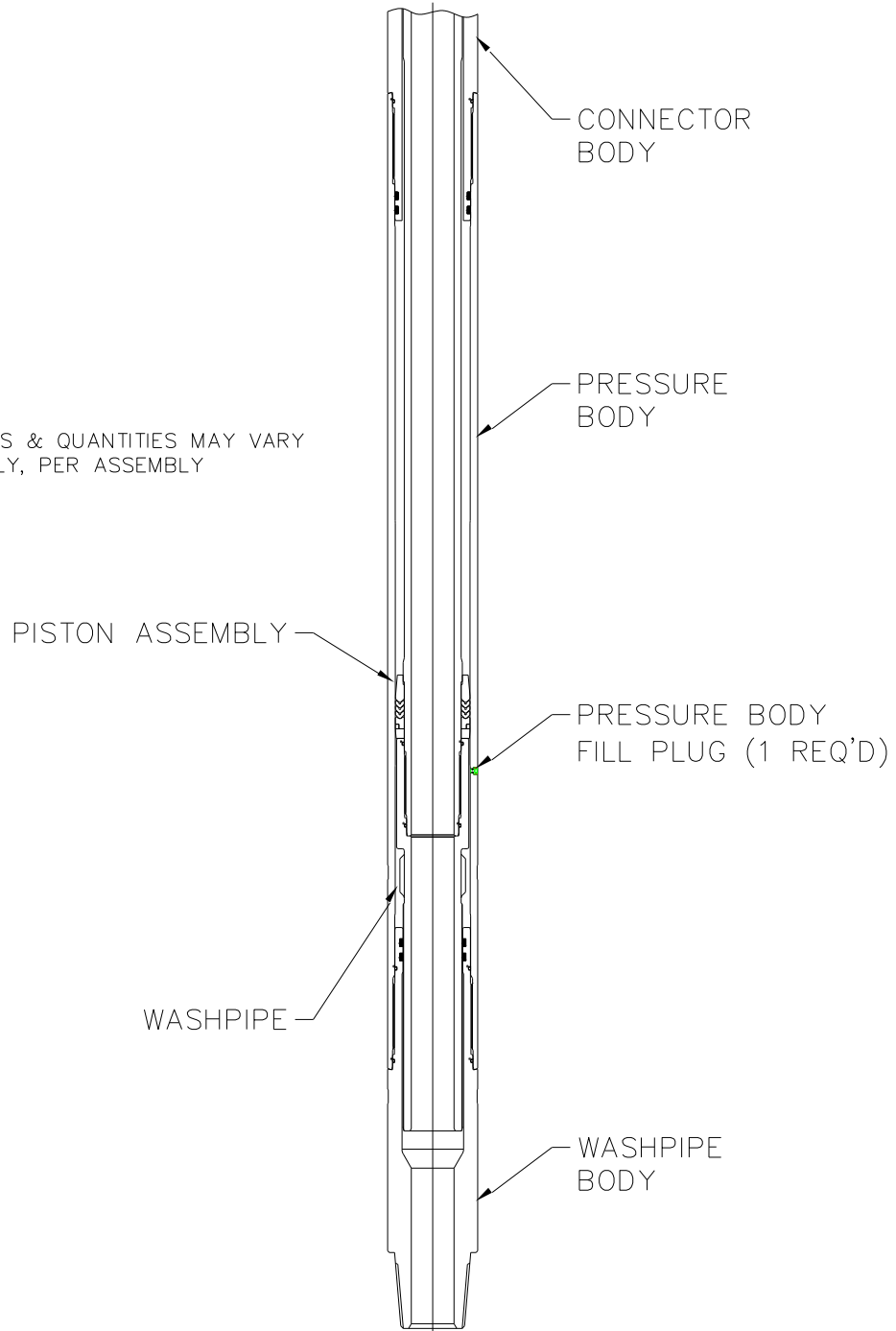
\*\*PARTS & QUANTITIES MAY VARY  
SLIGHTLY, PER ASSEMBLY





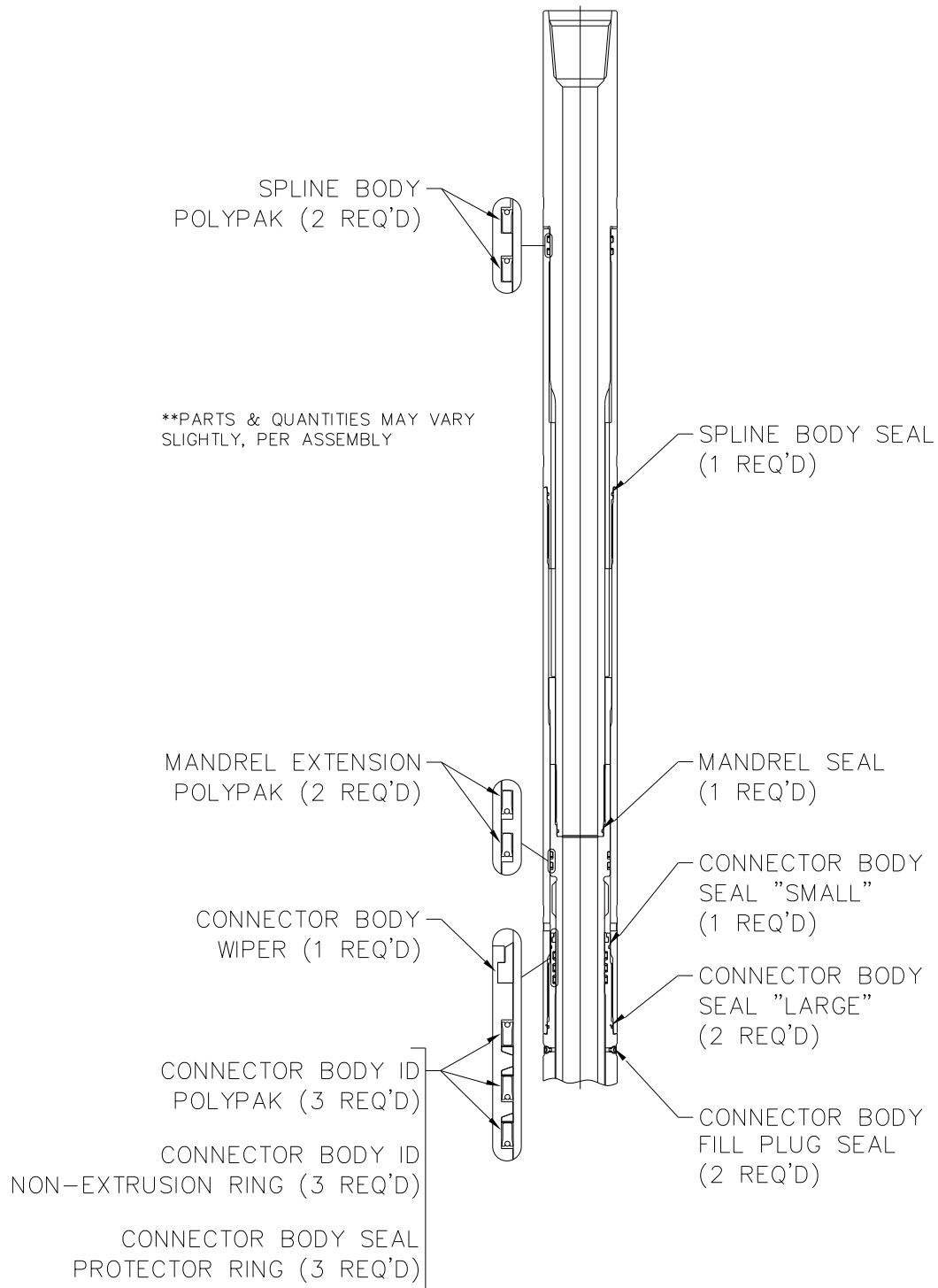
## METAL PARTS (LOWER HALF)

\*\*PARTS & QUANTITIES MAY VARY  
SLIGHTLY, PER ASSEMBLY

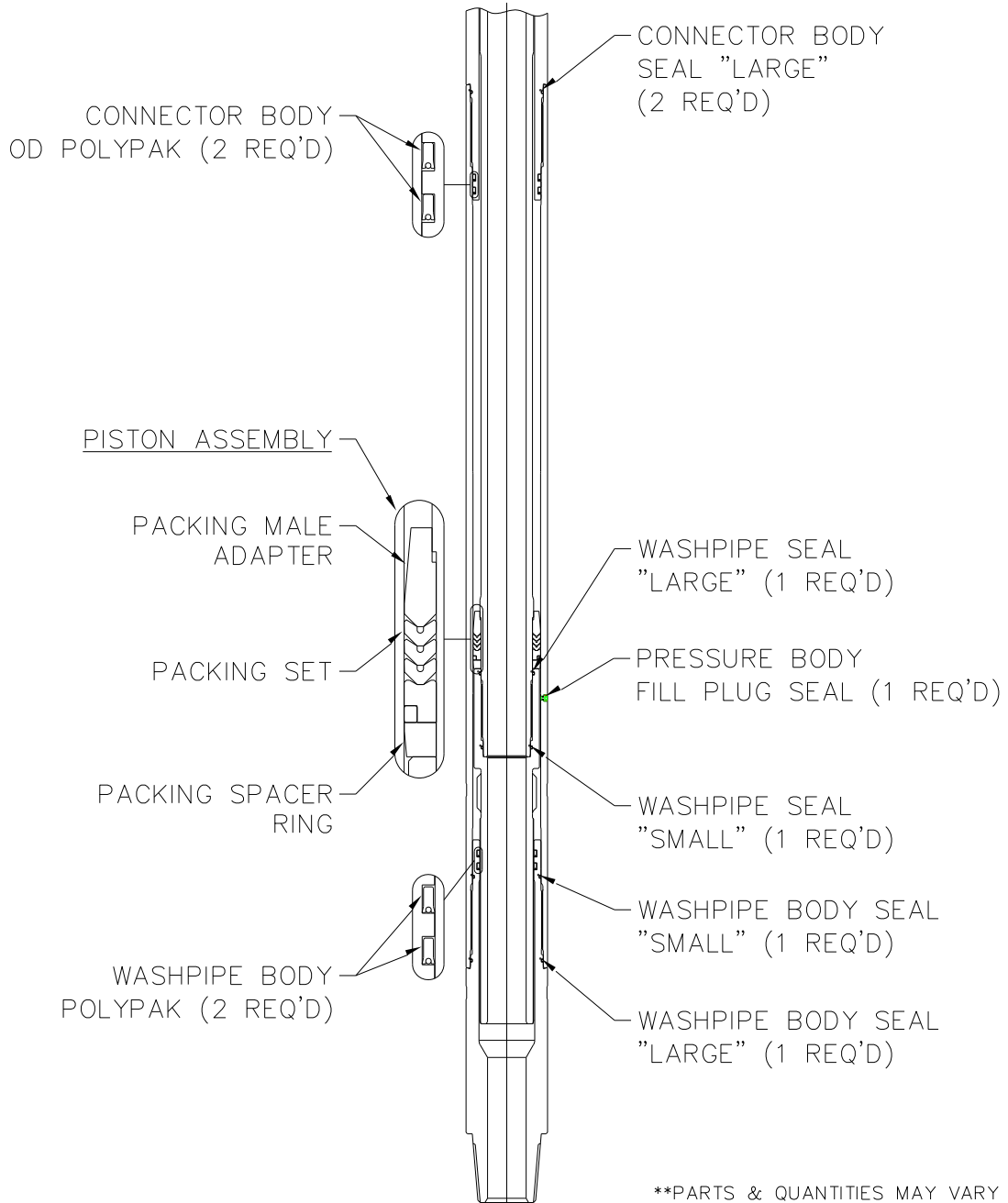




## POLYPAKS & SEALS (UPPER HALF)



## POLYPAKS & SEALS (LOWER HALF)





# Gotco International

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-3/8 EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 I.F.	2-7/8 API REG	2-3/8 EUE
OUTSIDE DIA.	INCHES	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAM.	INCHES	1-1/2	1	1—1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	PART# XREF#	SA-306 614-306	SA-31 614-312	SA-313 614-313	SA-36 614-375	SA-377 614-377	SA-376 614-376

## MAJOR COMPONENT PARTS

MANDREL	PART# XREF#	SA-306-2 BX11	SA-31-2 BX10	SA-313-2 BX11	SA-36-2 BX12	SA-377-2 (BX12)	SA-376-2 BX18
MANDREL EXTENSION	PART# XREF#	SA-306-2X BX51	SA-31-2X BX50	SA-313-2X BX51	SA-36-2X BX52	SA-377-2X (BX52)	SA-376-2X BX58
MANDREL IMPACT SLEEVE	PART# XREF#	SA-313-2-IS BX31	SA-31-2-IS BX30	SA-313-2-IS BX31	.....	.....	SA-376-IS BX38
SPLINE BODY	PART# XREF#	SA-313-4 BX21	SA-31-4 BX20	SA-313-4 BX21	SA-36-4 BX22	SA-36-4 (BX22)	SA-376-4 BX28
BALANCE BODY	PART# XREF#	SA-313-5 BX41	SA-31-5 BX40	SA-313-5 BX41	SA-36-5 BX42	SA-36-5 (BX42)	SA-376-5 BX48
PISTON ASSY	PART# XREF#	SA-313-3 BX61	SA-31-3 BX60	SA-313-3 BX61	SA-36-3 BX62	SA-36-3 (BX62)	SA-376-3 BX68
CONSIST OF:							
PACKING SET	PART# XREF#	SA-313-3-4 BX61-1	SA-31-3-4 BX60-1	SA-313-3-4 BX61-1	SA-36-3-4 BX62-1	SA-36-3-4 (BX62-1)	SA-376-3-4 BX68-1
MALE ADAPTER	PART# XREF#	SA-313-3-2M BX61-2	SA-31-3-2M BX60-2	SA-313-3-2M BX61-2	SA-36-3-2M BX62-2	SA-36-3-2M (BX62-2)	SA-376-3-2M BX68-2
SPACER RING	PART# XREF#	SA-313-3-3 BX61-3	SA-31-3-3 BX60-3	SA-313-3-3 BX61-3	SA-36-3-3 BX62-3	SA-36-3-3 (BX62-3)	SA-376-3-3 BX68-3
WASHPIPE BODY	PART# XREF#	SA-306-6 BX111	SA-31-6 BX110	SA-313-6 BX111	SA-36-6 BX112	SA-377-6 (BX112)	SA-376-6 BX118
WASHPIPE	PART# XREF#	SA-306-8 BX101	SA-31-8 BX100	SA-313-8 BX101	SA-36-8 BX102	SA-377-8 (BX102)	SA-376-8 BX108
CONNECTOR BODY	PART# XREF#	SA-313-9 BX71	SA-31-9 BX70	SA-313-9 BX71	SA-36-9 BX72	SA-36-9 (BX72)	SA-376-9 BX78
PRESSURE BODY	PART# XREF#	SA-313-10 BX91	SA-31-10 BX90	SA-313-10 BX91	SA-36-10 BX92	SA-36-10 (BX92)	SA-376-10 BX98
SETTING TOOL CONN. BODY I.D.	PART# XREF#	SA-313-17	SA-31-17	SA-313-17	SA-36-17	SA-36-17	SA-376-17
MANDREL EXT. ASSEMBLY SLEEVE	PART# XREF#	SA-313-SLV BD205-6	SA-31-SLV BX140-5	SA-313-SLV BD205-6	SA-36-SLV BX201-6	SA-36-SLV (BX201-6)	SA-376-SLV BD208-6

**\*\*Setting Tools are Optional Equipment.**

**\* See Ordering Instructions in this Section.**





# Gotco International

## SUPREME AMPLIFIERS

SIZE		2-7/8	3-1/2	4-1/2	5-1/2	5-1/2
CONNECTIONS		API I.F.	API I.F.	API I.F.	API REG	API REG
OUTSIDE DIA.	INCHES	4-1/4	4-3/4	6-1/4	6-3/4	7-3/4
INSIDE DIAM.	INCHES	2	2-1/4	2-1/4	2-3/4	3-1/16
COMPLETE	PART#	SA-42	SA-46	SA-62	SA-66	SA-76
ASSEMBLY	XREF#	614-425	614-475	614-625	614-675	614-775

## MAJOR COMPONENT PARTS

MANDREL	PART#	SA-42-2	SA-46-2	SA-62-2	SA-66-2	SA-76-2
	XREF#	BX13	BX14	BX15	BX16	BX17
MANDREL	PART#	SA-42-2X	SA-46-2X	SA-62-2X	SA-66-2X	SA-76-2X
EXTENSION	XREF#	BX53	BX54	BX55	BX56	BX57
MANDREL	PART#	.....	SA-46-2-IS	.....	SA-66-2-IS	SA-76-IS
IMPACT	XREF#	.....	BX34	.....	BX36	BX37
SLEEVE						
SPLINE BODY	PART#	SA-42-4	SA-46-4	SA-62-4	SA-66-4	SA-76-4
	XREF#	BX23	BX24	BX25	BX26	BX27
BALANCE	PART#	SA-42-5	SA-46-5	SA-62-5	SA-66-5	SA-76-5
BODY	XREF#	BX43	BX44	BX45	BX46	BX47
PISTON ASSY	PART#	SA-42-3	SA-46-3	SA-62-3	SA-66-3	SA-76-3
	XREF#	BX63	BX64	BX65	BX66	BX67
CONSISTS OF:						
PACKING SET	PART#	SA-42-3-4	SA-46-3-4	SA-62-3-4	SA-66-3-4	SA-76-3-4
	XREF#	BX63-1	BX64-1	BX65-1	BX66-1	BX67-1
MALE	PART#	SA-42-3-2M	SA-46-3-2M	SA-62-3-2M	SA-66-3-2M	SA-76-3-2M
ADAPTER	XREF#	BX63-2	BX64-2	BX65-2	BX66-2	BX67-2
SPACER RING	PART#	SA-42-3-3	SA-46-3-3	SA-62-3-3	SA-66-3-3	SA-76-3-3
	XREF#	BX63-3	BX64-3	BX65-3	BX66-3	BX67-3
WASHPIPE	PART#	SA-42-6	SA-46-6	SA-62-6	SA-66-6	SA-76-6
BODY	XREF#	BX113	BX114	BX115	BX116	BX117
WASHPIPE	PART#	SA-42-8	SA-46-8	SA-62-8	SA-66-8	SA-76-8
	XREF#	BX103	BX104	BX105	BX106	BX107
CONNECTOR	PART#	SA-42-9	SA-46-9	SA-62-9	SA-66-9	SA-76-9
BODY	XREF#	BX73	BD62	BD63	BD67	BD64
PRESSURE	PART#	SA-42-10	SA-46-10	SA-62-10	SA-66-10	SA-76-10
BODY	XREF#	BX93	BX94	BX95	BX96	BX97
SETTING TOOL	PART#	SA-42-17	SA-46-17	SA-62-17	SA-66-17	SA-76-17
CONN. BODY	XREF#					
I.D.						
MANDREL EXT.	PART#	SA-42-SLV	SA-46-SLV	SA-62-SLV	.....	.....
ASSEMBLY	XREF#	BD206-6	BX144-5	BX145-5	.....	.....
SLEEVE						

**\*\*Setting Tools are Optional Equipment.**

**\* See Ordering Instructions in this Section.**



# Gotco International

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-3/8 EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 I.F.	2-7/8 API REG	2-3/8 EUE
OUTSIDE DIA.	INCHES	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAM.	INCHES	1-1/2	1	1—1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	PART# XREF#	SA-306 614-306	SA-31 614-312	SA-313 614-313	SA-36 614-375	SA-377 614-377	SA-376 614-376

## O-RINGS, WIPERS, AND PARBAK RINGS

MANDREL SEAL	PART# XREF#	G-2-225 568-225 (1)	..... .....	G-2-225 568-225 (1)	G-2-225 568225 (1)	G-2-225 568225 (1)	..... .....
MANDREL EXT. SEAL	PART# XREF#				..... .....	..... .....	
MANDREL EXT. WIPER	PART# XREF#	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....
SPLINE BODY SEAL	PART# XREF#	G-2-230 568230 (1)	G-2-230 568230 (1)	G-2-230 568230 (1)	G-2-234 568234 (1)	G-2-234 568234 (1)	..... .....)
CONN. BODY SEAL –(LARGE)	PART# XREF#	G-2-230 568230 (2)	G-2-230 568230 (2)	G-2-230 568230 (2)	G-2-234 568234 (2)	G-2-234 568234 (2)	..... .....
CONN. BODY SEAL – (SMALL)	PART# XREF#	G-2-228 568228 (2)	G-2-228 568228 (2)	G-2-228 568228 (2)	G-2-232 568232 (1)	G-2-232 568232 (1)	..... .....
CONN BODY WIPER	PART# XREF#	..... .....	..... .....	..... .....	SJ-36-9W BD71 (1)	SJ-36-9W BD71 (1)	..... .....
CON BODY PARBAK RING		G-8-228 8-228 (2)	G-8-227 8-227 (2)	G-8-228 8-228 (2)			
CONN BODY FILL PLUG SEAL	PART# XREF#	G-2-005 568005 (2)	G-2-006 568006 (2)	G-2-005 568005 (2)	G-2-006 568006 (2)	G-2-006 568006 (2)	..... ..... .....
PRESSURE BODY FILL PLUG SEAL-	PART# XREF#	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....
WASHPIPE SEAL-(LARGE)	PART# XREF#	..... .....	G-2-130 568130 (1)	..... .....	G-2-227 568227 (1)	G-2-227 568227 (1)	..... .....
WASHPIPE SEAL-(SMALL)	PART# XREF#	G-2-224 568224 (1)	G-2-221 568221 (1)	G-2-224 568224 (1)	G-2-225 568225 (1)	G-2-225 568225 (1)	..... .....
W'PIPE BODY SEAL- (LARGE).	PART# XREF#	G-2-230 568230 (1)	G-2-230 568230 (1)	G-2-230 568230 (1)	G-2-234 568234 (1)	G-2-234 568234 (1)	..... .....
W'PIPE BODY SEAL-(SMALL)	PART# XREF#	G-2-228 568228 (1)	G-2-228 568228 (1)	G-2-228 568228 (1)	G-2-232 568232 (1)	G-2-232 568232 (1)	..... .....
O-RING PACKING SET	PART# XREF#	SA-306-20 BX131	SA-31-20 BX130	SA-313-20 BX131	SA-36-20 BX132	SA-36-20 BX132	SA-376-20 BX138

**\* See Ordering Instructions in this Section.**

**\* WIPERS ARE NOT PART OF THE “O-RING PACKING SET.”**



# Gotco International

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-7/8 API I.F.	3-1/2 API I.F.	4-1/2 API I.F.	5-1/2 API REG	5-1/2 API REG
OUTSIDE DIA.	INCHES	4-1/4	4-3/4	6-1/4	6-3/4	7-3/4
INSIDE DIAM.	INCHES	2	2-1/4	2-1/4	2-3/4	3-1/16
COMPLETE ASSEMBLY	PART# XREF#	SA-42 614-425	SA-46 614-475	SA-62 614-625	SA-66 614-675	SA-76 614-775

## O-RINGS, WIPERS, AND PARBAK RINGS

MANDREL SEAL	PART# XREF#	G-2-229 568229 (1)	G-2-232 568232 (1)	G-2-236 568236 (1)	..... .....	G-2-348 568348 (1)
MANDREL EXT. SEAL	PART# XREF#	..... .....	..... .....		..... .....	
MANDREL EXT. WIPER	PART# XREF#	..... .....	..... .....	SJ-62-2X-W BD223	..... .....	SJ-76-2X-W BD224
SPLINE BODY SEAL	PART# XREF#	G-2-238 568238 (1)	G-2-242 568242 (1)	G-2-254 568254 (1)	..... .....	G-2-362 568362 (1)
CONN. BODY SEAL –(LARGE)	PART# XREF#	G-2-238 568238 (2)	G-2-242 568242 (2)	G-2-253 568253 (2)	..... .....	G-2-362 568362 (2)
CONN. BODY SEAL – (SMALL)	PART# XREF#	G-2-236 568236	G-2-239 568239 (1)	G-2-250 568250 (1)	..... .....	G-2-361 568361 (1)
CONN BODY WIPER	PART# XREF#	SJ-42-9W BD76 (1)	SA-46-9W BX84 (1)	SJ-62-9W BD73 (1)	SA-66-9W BX86 (1)	SJ-76-9W BD74 (1)
CONN BODY PARBAK RING						
CONN BODY FILL PLUG SEAL	PART# XREF#	G-2-006 568006	G-2-006 568006 (2)	G-2-006 568006 (2)	..... .....	G-2-006 568006 (2)
PRESSURE BODY FILL PLUG SEAL	PART# XREF#	G-2-005 568005 (1)	G-2-005 568005 (1)	G-2-005 568005 (1)	..... .....	G-2-005 568005 (1)
SEAL BODY SEAL-	PART# XREF#	G-2-231 568231 (1)	G-2-234 568234 (1)	G-2-341 568341 (1)	..... .....	G-2-347 568347 (1)
WASHPIPE SEAL-(LARGE)	PART# XREF#	G-2-231 568231 (1)	G-2-234 568234 (1)	G-2-238 568238 (1)	..... .....	G-2-347 568347 (1)
WASHPIPE SEAL-(SMALL)	PART# XREF#	G-2-229 568229 (1)	G-2-232 5682232 (1)	G-2-234 568234	..... .....	..... .....
W'PIPE BODY SEAL- (LARGE).	PART# XREF#	G-2-238 568238 (1)	G-2-242 568242 (1)	G-2-252 568252 (1)	..... .....	G-2-362 568362 (1)
W'PIPE BODY SEAL-(SMALL)	PART# XREF#	G-2-236 568236 (1)	G-2-239 568239 (1)	G-2-250 568250 (1)	..... .....	G-2-361 568361 (1)
O-RING PACKING SET	PART# XREF#	SA-42-20 BX133	SA-46-20 BX134	SA-62-20 BX135	SA-66-20 BX136	SA-76-20 BX137

**\* See Ordering Instructions in this Section.**

**\* WIPERS ARE NOT PART OF THE “O-RING PACKING SET.”**



# Gotco International

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-3/8 EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 I.F.	2-7/8 API REG	2-3/8 EUE
OUTSIDE DIA.	INCHES	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAM.	INCHES	1-1/2	1	1—1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	PART# XREF#	SA-306 614-306	SA-31 614-312	SA-313 614-313	SA-36 614-375	SA-377 614-377	SA-376 614-376

## FILL PLUGS REQUIRED:

CONNECTOR BODY-FILL PLUG	PART# XREF#	G-617 AG10000 (2)	G-329 AG10002 (2)	G-617 AG10000 (2)	G-329 AG10002 (2)	G-329 AG10002 (2)	.....
PRESSURE BODY FILL PLUG		G-125 AG10004 (1)	G-125 AG10004 (1)	G-125 AG10004 (1)	G-125 AG10004 (1)	G-125 AG10004 (1)	.....

**\*\*MOST FILL PULGS REQUIRE AN O-RING, SEE THE “O-RING PART LIST ON THE PREVIOUS PAGE.**

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-7/8 API I.F.	3-1/2 API I.F.	4-1/2 API I.F.	5-1/2 API REG	5-1/2 API REG
OUTSIDE DIA.	INCHES	4-1/4	4-3/4	6-1/4	6-3/4	7-3/4
INSIDE DIAM.	INCHES	2	2-1/4	2-1/4	2-3/4	3-1/16
COMPLETE ASSEMBLY	PART# XREF#	SA-42 614-425	SA-46 614-475	SA-62 614-625	SA-66 614-675	SA-76 614-775

## FILL PLUGS REQUIRED:

CONNECTOR BODY-FILL PLUG	PART# XREF#	G-329 AG10002 (2)	G-329 AG10002 (2)	G-329 AG10002 (2)	G-329 AG10002 (2)	G-329 AG10002 (2)
PRESSURE BODY FILL PLUG		G-617 AG10000 (1)	G-617 AG10000 (1)	G-617 AG10000 (1)	G-617 AG10000 (1)	G-617 AG10000 (1)

**\*\*MOST FILL PULGS REQUIRE AN O-RING, SEE THE “O-RING PART LIST ON THE PREVIOUS PAGE.**

*PARTS LIST CONTINUES ON THE NEXT PAGE.*



## SUPREME AMPLIFIERS

### POLYPAK PARTS LIST

GOTCO ASS'Y		SA-306	SA-31	SA-313	SA-36/377	SA-42	SA-46	SA-62
POLYPAK KITS # XREF#		SA-313-PPK	SA-31-PPK	SA-313-PPK	SA-36-PPK	SA-42-PPK	SA-46-PPK	SA-62-PPK
MANDREL EXTENSION	PART# GOTCO# XREF# QTY	SA-306-2X PPK-022 BD205-2 1	SA-31-2X PPK-022 BD205-2 2	SA-313-2X PPK-022 BD205-2 1	SA-36-2X PPK-018 BD201-2 2	SA-42-2X PPK-014 BX144-3 2	SA-46-2X PPK-010 BD202-2 2	SA-62-2X PPK-006 BD203-2 2
SPLINE BODY	PART# GOTCO# XREF# QTY	SA-306-4 PPK-021 BD205-1 2	SA-31-4 PPK-021 BD205-1 2	SA-313-4 PPK-021 BD205-1 2	SA-36-4 PPK-011 BD202-3 2	SA-42-4 PPK-010 BD202-2 2	SA-46-4 PPK-009 BD202-1 2	SA-62-4 PPK-005 BD203-1 2
WASHPIPE BODY I.D.	PART# GOTCO# XREF# QTY	SA-306-6 PPK-023 BD205-3 2	SA-31-6 PPK-022 BD205-2 2	SA-313-6 PPK-023 BD205-3 2	SA-36-6 PPK-019 BD201-3 2	SA-42-6 PPK-015 AQ26003 2	SA-46-6 PPK-014 BX144-3 2	SA-62-6 PPK-007 BD203-3 2
CONNECTOR BODY I.D. SMALL	PART# GOTCO# XREF# QTY	SA-306-9 PPK-023 BD205-3 3	SA-31-9 PPK-024 BD200-3 3	SA-313-9 PPK-023 BD205-3 3	SA-36-9 PPK-019 BD201-3 3	SA-42-9 PPK-015 AQ26003 3	SA-46-9 PPK-014 BX144-3 3	SA-62-9 PPK-007 BD203-3 3
CONNECTOR BODY I.D. LARGE	PART# GOTCO# XREF# QTY							
CONNECTOR BODY O.D.	PART# GOTCO# XREF# QTY				SA-36-9 PPK-015 AQ29003 2	SA-42-9 PPK-020 AQ26005 2	SA-46-9 PPK-013 BD202-5 2	SA-62-9 PPK-008 BD203-5 2

*POLYPAK PARTS LIST CONTINUES ON THE NEXT PAGE.*





## SUPREME FISHING AMPLIFIERS

### POLYPAK PARTS LIST

GOTCO ASS'Y		SA-76						
POLYPAK KITS # XREF#		SA-76-PPK						
MANDREL EXTENSION	PART# GOTCO# XREF# QTY	SA-76-2X PPK-002 BD204-2 2						
SPLINE BODY	PART# GOTCO# XREF# QTY	SA-76-4 PPK-001 BD204-1 2						
WASHPIPE BODY I.D.	PART# GOTCO# XREF# QTY	SA-76-6 PPK-003 BD204-3 2						
CONNECTOR BODY I.D. SMALL	PART# GOTCO# XREF# QTY	SA-76-9 PPK-003 BD204-3 4						
CONNECTOR BODY I.D. LARGE	PART# GOTCO# XREF# QTY							
CONNECTOR BODY O.D.	PART# GOTCO# XREF# QTY	SA-76-9 PPK-004 BD204-4 2						



# Gotco International

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-3/8 EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 I.F.	2-7/8 API REG	2-3/8 EUE
OUTSIDE DIA.	INCHES	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAM.	INCHES	1-1/2	1	1—1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	PART# XREF#	SA-306 614-306	SA-31 614-312	SA-313 614-313	SA-36 614-375	SA-377 614-377	SA-376 614-376

## COPPER RINGS, NON-EXTRUSION & SEAL PROTECTOR RINGS

CONN. BODY SEAL PROT. RING// PARBAK RING	PART# XREF#	G-8-228 8-228 (2)	G-8-227 8-227 (2)	G-8-228 8-228 (2)	XXXX L375-34 (2)	XXXX L375-34 (2)	..... ..... .....
CONN. BODY ID NON-EXT. RING	PART# XREF#	FJ-31-12 L365-32 (1)	XXXX L365-30.5 (2)	FJ-31-12 L365-32 (2)	SJ-36-9-12 BD231 (3)	SJ-36-9-12 BD231 (3)	..... ..... .....
CONN. BODY OD NON-EXT. RING	PART# XREF#	XXXXXX L366-33.5 (2)	SA-31-9-12A BX160 (1).	XXXXXX L366-33.5 (2)	..... NOT REQD.	..... NOT REQD.	..... .....

## SUPREME AMPLIFIERS

SIZE CONNECTIONS		2-7/8 API I.F.	3-1/2 API I.F.	4-1/2 API I.F.	5-1/2 API REG	5-1/2 API REG
OUTSIDE DIA.	INCHES	4-1/4	4-3/4	6-1/4	6-3/4	7-3/4
INSIDE DIAM.	INCHES	2	2-1/4	2-1/4	2-3/4	3-1/16
COMPLETE ASSEMBLY	PART# XREF#	SA-42 614-425	SA-46 614-475	SA-62 614-625	SA-66 614-675	SA-76 614-775

## COPPER RINGS, NON-EXTRUSION & SEAL PROTECTOR RINGS

CONN. BODY SEAL PROT. RING// PARBAK RING	PART# XREF#	XXXX XXXX (3)	XXXX L375-41 (3)	SJ-62-9-13 BD273 (3)	.... .....	SJ-76-9-13 BD274 (4)
CONN. BODY ID NON-EXT. RING	PART# XREF#	SJ-42-9-12 BD236 (3)	SA-46-9-12 BX154 (3)	SJ-62-9-12 BD233 (3)	..... .....	SJ-76-9-12 BD234 (4)
CONN. BODY OD NON-EXT. RING	PART# XREF#	..... NOT REQD.	..... .NOT REQD.	..... NOT REQD.	..... .....	NOT REQD. .....



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## SUPREME AMPLIFIERS (Silicon Energizing Fluid Required)

SIZE		2-3/8	2-3/8	2-7/8	2-3/8	2-7/8	2-3/8
CONNECTIONS		EUE	API REG	PAC	I.F.	API REG	EUE
OUTSIDE DIA.	INCHES	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAM.	INCHES	1-1/2	1	1—1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	PART# XREF#	SA-306 614-306	SA-31 614-312	SA-313 614-313	SA-36 614-375	SA-377 614-377	SA-376 614-376

## Amplifier Silicon Oil Required (Gallons per Assembly)

JAR OIL (Lube)	PART#	SA-FL-5	SA-FL-1	SA-FL-5	SA-FL-30	SA-FL-30	SA-FL-55
REQUIRED	XREF#	50529-C	50529-C	50529-C	50529-D	50529-D	50529-E
PER ASSEMBLY		5 Gallons	5 Gallons	5 Gallons	30 Gallons	30 Gallons	55 Gallons

## SUPREME AMPLIFIERS (Silicon Energizing Fluid Required)

SIZE		2-7/8	3-1/2	4-1/2	5-1/2	5-1/2
CONNECTIONS		API I.F.	API I.F.	API I.F.	API REG	API REG
OUTSIDE DIA.	INCHES	4-1/4	4-3/4	6-1/4	6-3/4	7-3/4
INSIDE DIAM.	INCHES	2	2-1/4	2-1/4	2-3/4	3-1/16
COMPLETE ASSEMBLY	PART# XREF#	SA-42 614-425	SA-46 614-475	SA-62 614-625	SA-66 614-675	SA-76 614-775

## Amplifier Silicon Oil Required (Gallons per Assembly)

JAR OIL (Lube)	PART#	SA-FL-55	SA-FL-55	SA-FL-55	SA-FL-55	SA-FL-55
REQUIRED	XREF#	50529-E	50529-E	50529-E	50529-E	50529-E
PER ASSEMBLY		55 Gallons	55 Gallons	55 Gallons	55 Gallons	55 Gallons

## SERVICE KIT

<b>Service Kit, Complete Assembly</b>	Gotco P/N: SK-100	Service Kit is required for
<b>Consists of:</b>	Logan Ref. P/N: 26000-055	filling the Jar with oil.
Seal Protector Ring Installation Tool	Hose Fitting, 1/4" -19 NPT Pin	
O-Ring Installation Tool	Exhaust Hose, 6 Ft.	
Fill Plug Wrench, T30 Torx Head	Pump Hose	
Fill Plug Wrench, Allen Head	Volume Pump	
Pipe Nipple, 1/4" x 1"	Metal Box	
Line Filter	Fill Plug Adapter, 7/16" -20 NF	
1/4" Male Coupler	Fill Plug Adapter, 5/8"-18 NF	
1/4" Female Coupler	O-Ring G-2-010	
3/8" Box x 1/4" Galvanized Box Coupler	O-Ring, 70 Duro; G-2-005	
1/8" Box x 1/4" Pin Hex Bushing		

## LEGAL NOTICE:

All references to "Logan Oil Tool" part numbers in this manual are for the sole purpose of identifying interchangeable parts. Referencing these parts and tools does not imply that Gotco International is in any way affiliated with Logan Oil Tools. Gotco International does not represent any Logan Oil Tool Products.



# Gotco International

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